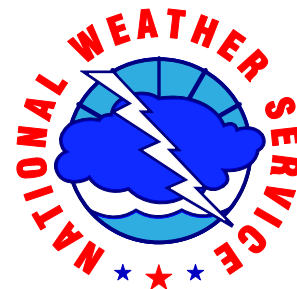# WSR-88D Data
Status And Plans

Tim Crum, Ph.D.

NWS Focal Point For WSR-88D Operational Issues

Tim.D.Crum@noaa.gov

6 June 2006

National Weather Service

Family Of Services/Partners Meeting
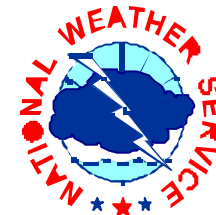
Silver Spring, MD
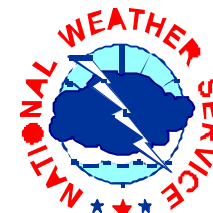
Level II Data Status

- No Changes Since January's Meeting
  - 121 NWS and 13 DOD Sites on the NWS Level II Network
  - NWS Telecommunications Operations Center (TOC)
    - Monitors Site Level II Outages Twice Daily
    - Notifies Regions and Sites of Level II Outages
  - Four Top Tier Sites In Operation
    - University of Oklahoma
    - Purdue University
    - Educational Research Consortium of the Western Carolinas
    - MAX Gigapop at the University of Maryland
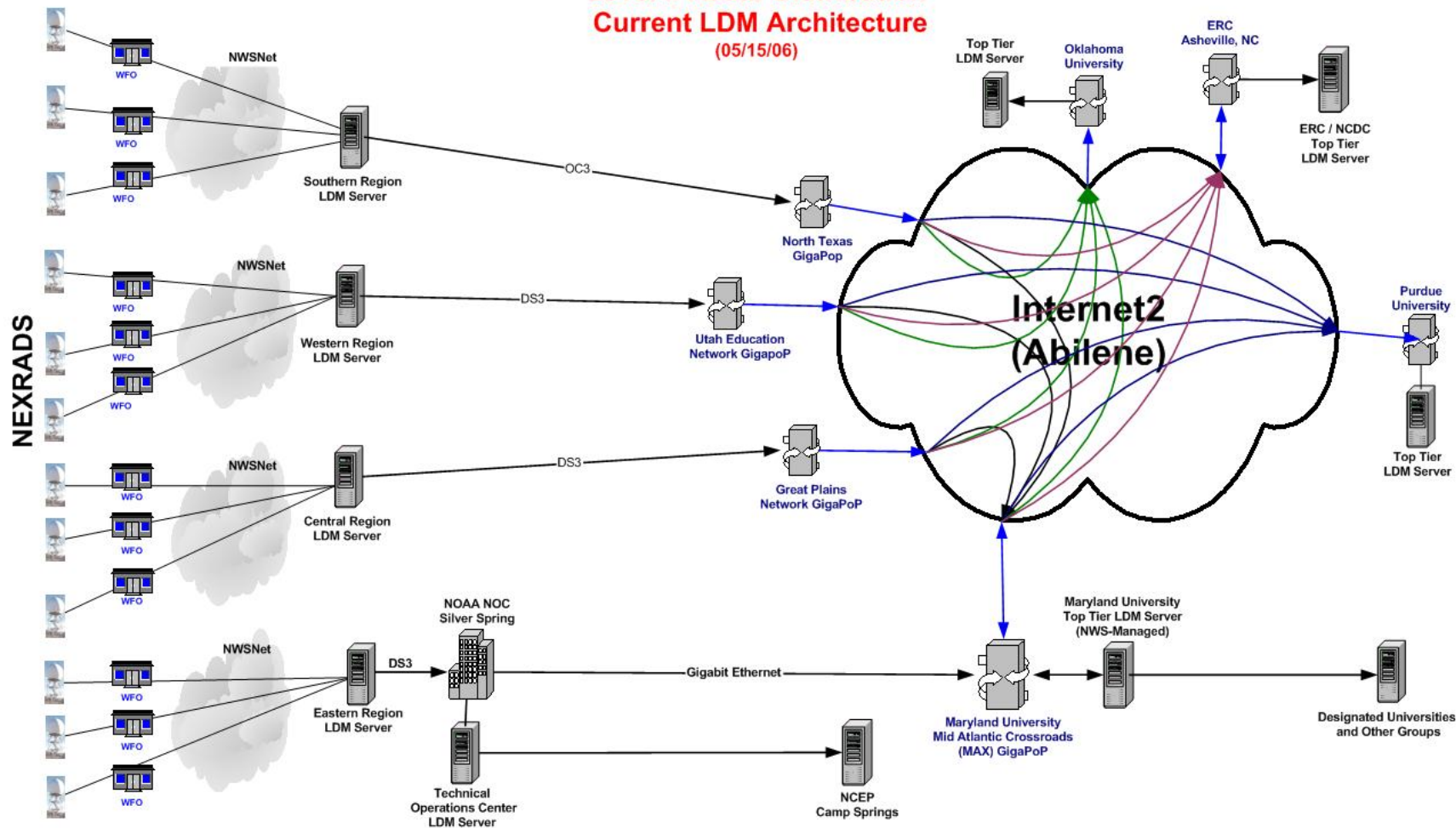 - Full Operational Capability Architecture in Place
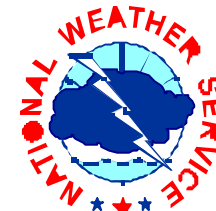
Level II Data Plans

- No Plans for Connections at Additional WSR-88D Sites at this Time
  - Earliest an FAA WSR-88D COULD Transmit Level II Data Is February 2007 with the Build 9 Beta Test at San Juan, PR
- NWS Examining Cost Effective Methods For Increasing Reliability Of Data Collection
  - Use the NOAANet MPLS (Multi Prototcol Label Switching)
    - Provide Redundancy and High Availability
    - WFOs Send Data To Two Aggregation Points – Avoiding the Current Regional HQ Aggregation Points
  - Top Tier Sites Can Request Data From Both Aggregation Points
    - Roles of Top Tiers Remains Unchanged
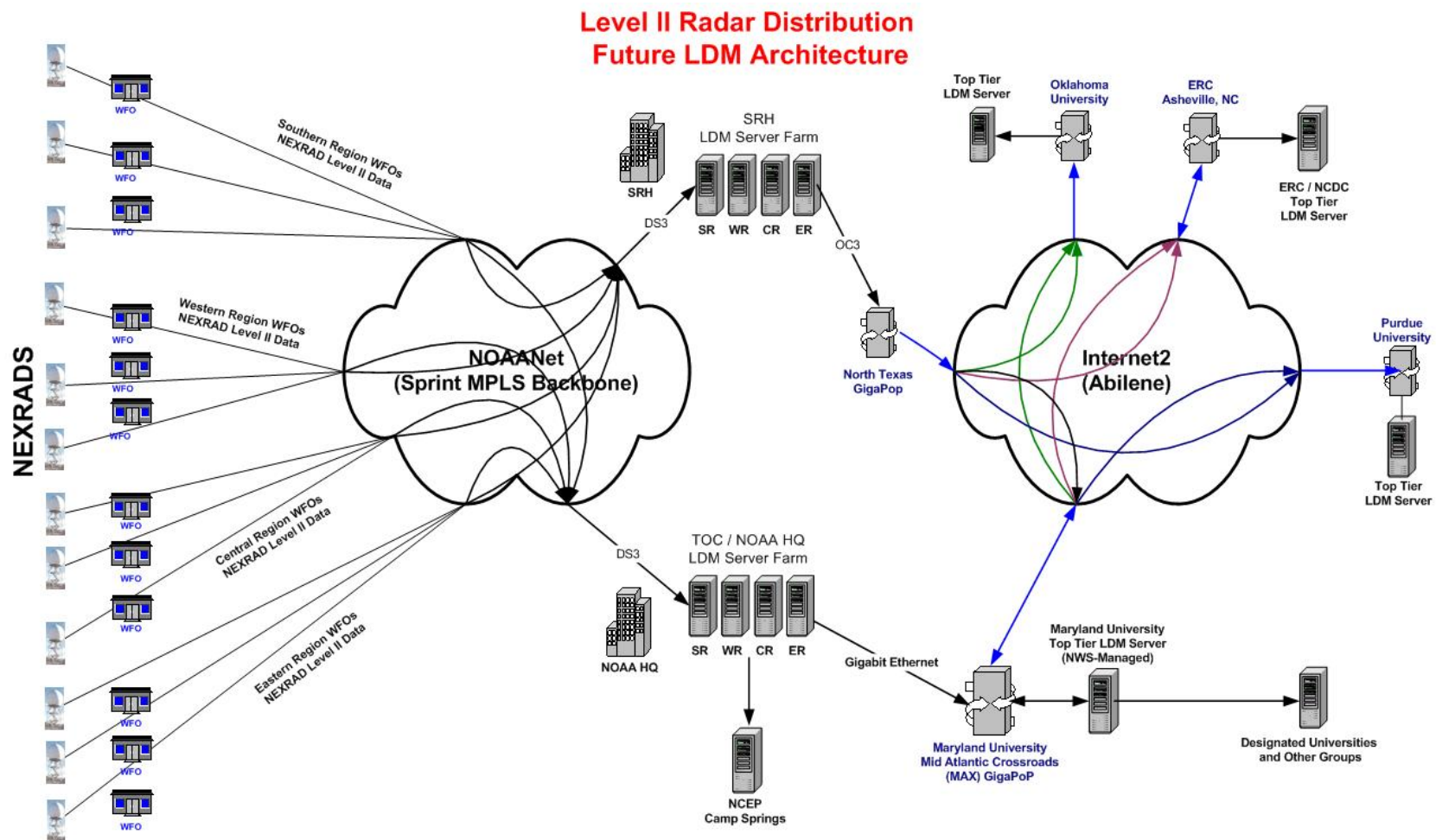   - NWS to Provide More Reliable Data Flow

Level II Data Plans

Level II Radar Distribution
Current LDM Architecture
(05/15/06)

Level II Data Plans

Level II Radar Distribution
Future LDM Architecture

Level II Data Plans

(Continued)

- Build 9
  - Beta Test Scheduled Start; January 2007
  - Field Release Scheduled Start; April 2007
  - Plan to Implement Sachidananda-Zrnic Algorithm (SZ-2)
    - Reduce Range Ambiguity
    - New VCP Numbers for VCPs Using SZ-2
      - Add a "2" Prefix to VCPs 11, 12, 21 (i.e., 211, 212, 221)

Level II Data Plans

(Continued)

- Build 10
  - Field Released Scheduled Start; April 2008
  - Planning Addition of "Super Resolution" Data for RPG Ingest in "Split Cuts"
    - 0.5 Degree Azimuthally Wide Data
    - Reflectivity Data 0.25 km Range Gates
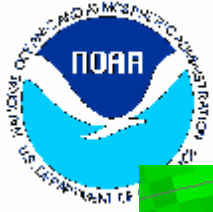   - Doppler Data Available to a Range of 300 km
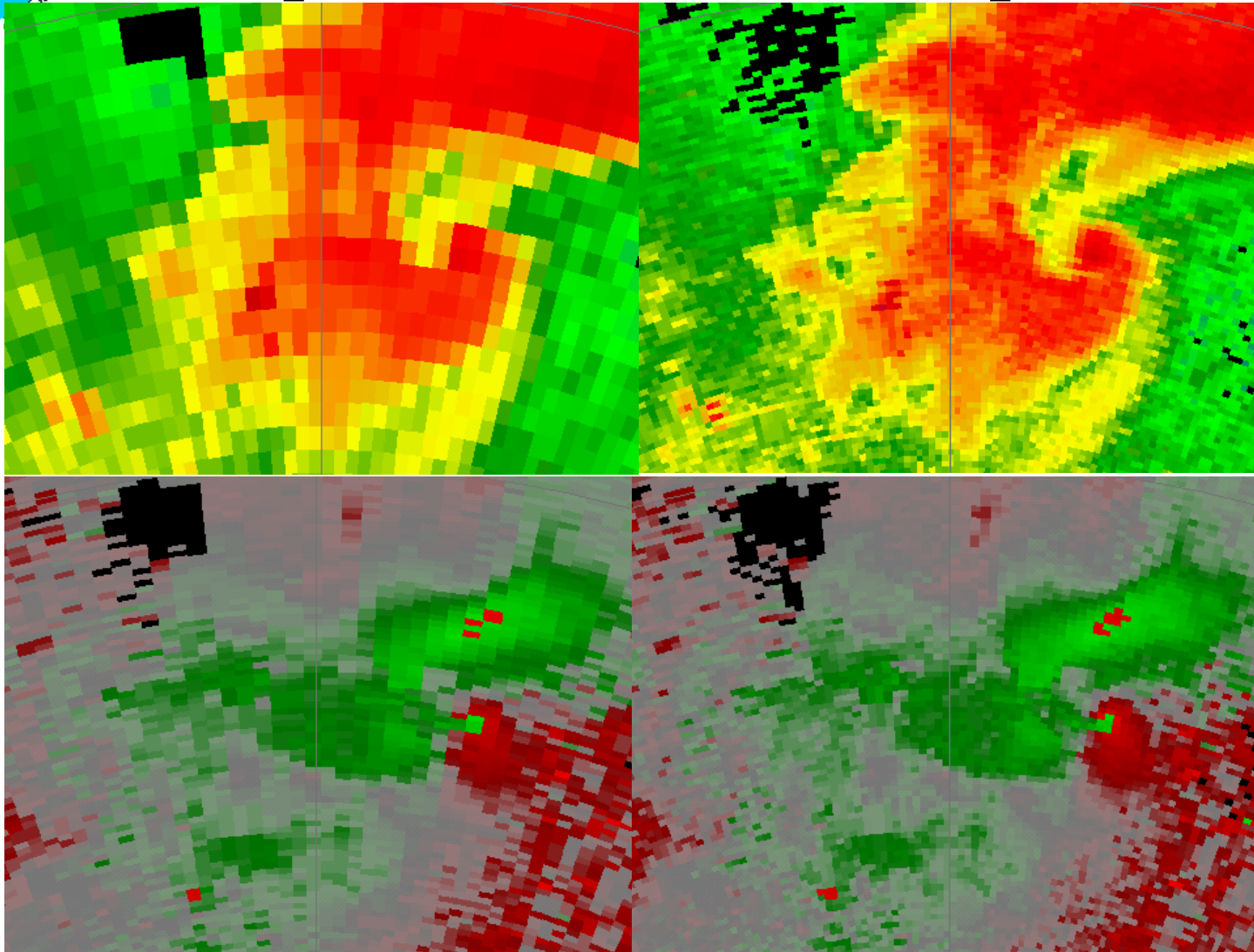
Level II Data Plans
(Continued)

- Build 10
  - Not Sure if Super Resolution Data Will Be Added To Level II Data Collection and Distribution Network
    - Not Likely If Additional Bandwidth/More Funding Needed
    - May Rely on LDM Queue to Handle Increased Data For Split Cuts
      - May Increase Data Latency, But Data Distributed
      - Analysis Required to Determine Impact on Data Latency
    - Planning to Implement "Message 31" to Replace "Message 1" Format
      - Enables Super Resolution and Dual Pol Data
      - ICDs Will be Available Well in Advance of Beta Tests

Super Resolution Examples

Legacy

Super
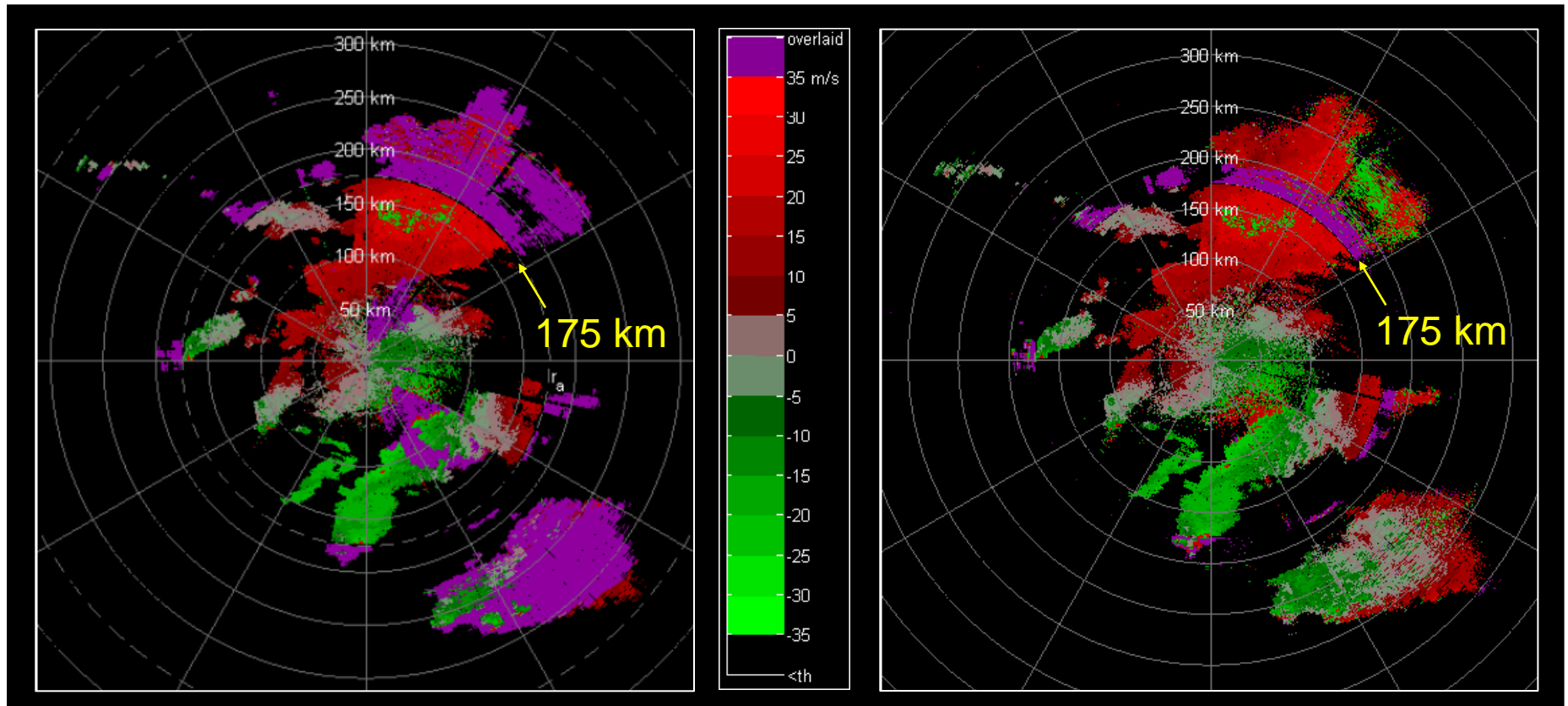
SZ-2 Algorithm Performance

04/06/03 4:28 GMT

Velocity
Legacy "Split cut"

EL = 0.5 deg

Velocity
SZ-2 with medium PRT

$v_a = 23.7$ m s^{-1}
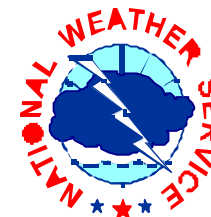
Level III Data Status

- Changes To Products Available Via RPCCDS Due to Build 8 (Now Installed At Over 80 Sites)
  - Adds Product #152, Archive III Status Product (ASP), Every 8 Hours, Contains RPG Status Log Messages
    - Status Messages Were on Level III WORM Disks
    - Small Product
  - Adds Product #141, New Mesocyclone Detection Product (MD)
    - After RPG Build 8 Installed at All Sites This Fall
  - Adds Median Filtering to SCIT Algorithm
    - Expect Less Cell Fragments and Tracks Should be More Stable
  - Build 8 RPG to Class 1 User ICD Provides Format Information

Level III Data Plans

(Continued)

- Build 8 Software Enables
  - Automatic Switching From Precipitation Mode To Clear Air Mode As Environment Dictates
  - Sites May Change Default Precipitation VCP
    - Unit Radar Committee Decision on If and When
  - Expect Little Change in Bandwidth (i.e., Sites Switching Back to Clear Air Mode Faster Will Offset Sites Using Faster VCP for Precipitation Default)
- Build 9
  - Beta Test Scheduled Start; January 2007
  - Field Release Scheduled Start; April 2007
  - Adds New VCP Numbers for VCPs Using Sachidananda-Zrnic Algorithm (SZ-2)
    - Add a "2" Prefix to VCPs 11, 12, 21 (i.e., 211, 212, 221)
    - Reduces Range Ambiguity

Level III Data Plans

(Continued)

- Build 10
  - Field Release Scheduled Start; April 2008
  - Planning to Delete Legacy Mesocyclone Algorithm and Associated Products, Including Product #60
    - Users Should Switch to Product #141 (Mesocyclone Detection Algorithm) Available After RPG Build 8 Installed at All Sites
      – Late in Calendar Year 2006

Additional Information

- Project Updates and Other Level II Information Posted at
    - http://www.roc.noaa.gov/NWS_Level_2
    - Also Sent to Top Tier Sites and Unidata
- NWS Real-Time Level II Data Monitoring Site
    - http://weather.noaa.gov/monitor/radar2/
- WSR-88D Software/Program Updates For Product Users Periodically Posted on RPCCDS Home Page
    - http://www.nws.noaa.gov/tg/rpccds.html
    - Also Sent Via FOS User Email List